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Mathematics 8
Unit 7 Assignment

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Mathematics 8

Learn EveryWare

Unit 7

Data Analysis and Probability

Assignment Booklet

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Summary

	Total Possible Marks	Your Mark
Lesson 1	19	
Lesson 2	14	
Lesson 3	14	
Lesson 4	14	
Lesson 5	19	
Lesson 6	24	
	104	

Teacher's Comments

Mathematics 8
Unit 7: Data Analysis and Probability
Assignment Booklet
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Teachers	✓
Administrators	
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Other	

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UNIT 7 ASSIGNMENT BOOKLET

The value of each assignment and each question is stated in the left margin.

Unit 7: Lesson 1 Question Set

1. A group of students placed two seeds for two different varieties of plants into the ground. They were investigating the rate of early plant growth and wanted see how the growth of the seeds might differ in the first ten-day period after the plants germinated or sprouted. The students decided to measure and record the heights of the plants for ten days starting from the day that the two plants sprouted. At the end of their investigation, the students had this data.

Seed Type 1	
Time (days)	Height (cm)
0	0.00
1	0.1
2	0.3
3	0.3
4	0.5
5	0.7
6	0.9
7	1.1
8	1.2
9	1.3
10	1.5

Seed Type 2	
Time (days)	Height (cm)
0	0.0
1	0.5
2	0.6
3	1.0
4	1.2
5	1.4
6	1.9
7	2.1
8	2.5
9	2.7
10	3.0

(4 marks) a. Which type of graph should be used to compare the growth rates of the seeds? Explain your answer.

_____

_____

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_____

(2 marks) b. Explain why a circle graph would not be a good choice to display the data.

2. In one classroom, students wanted to investigate the amount of fruit that the students ate. One group of the students recorded the number of bananas that the class ate in one week at school. The students collected the following data.

Bananas Eaten in One Week	
Monday	3
Tuesday	5
Wednesday	2
Thursday	3
Friday	4

(5 marks) a. Make a pictograph to represent the number of bananas eaten each day of the week.

(2 marks) b. Give two reasons why a pictograph works well as a graph type to represent the data.

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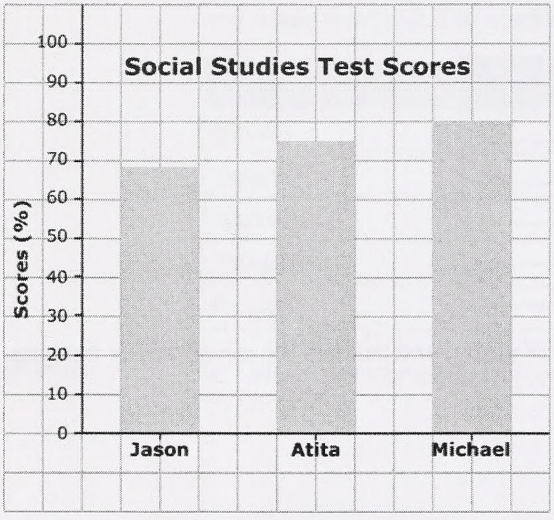
(6 marks) 3. A student did a small survey of her classmates to find out which kind of pet they prefer. The students could pick from bird, cat, fish, or dog. She recorded the results of her survey in a frequency table.

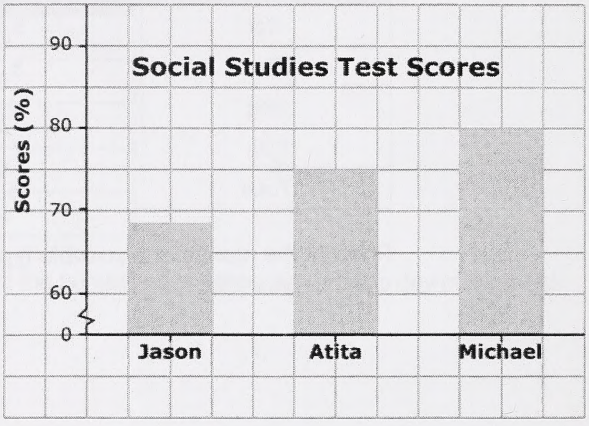
Pet Choice	Frequency
Cat	5
Bird	3
Dog	10
Fish	2
Total	15

Present the results in a suitable type of graph, and indicate the advantage of the type of graph you picked.

Unit 7: Lesson 2 Question Set

1. The graph on the left is a realistic graph showing the social studies test scores of students Jason, Atita, and Michael. Graph B is based on the same scores but is distorted.





(2 marks) a. How is Graph B distorted?

(2 marks) b. Describe how Graph B is misleading.

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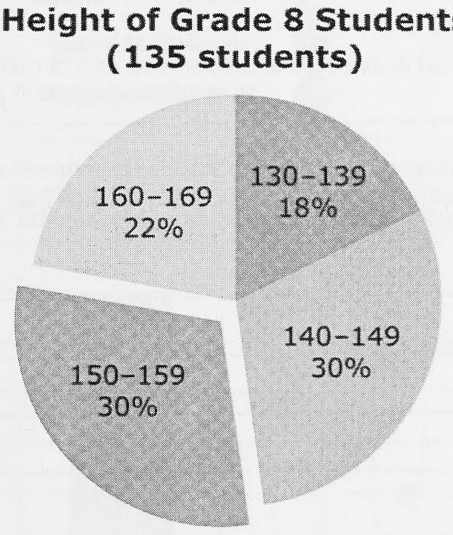
2. A student made the following circle graph to represent the heights of students in her grade.



(2 marks) a. How is this graph distorted?

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(2 marks) b. In what way could this graph be misleading?

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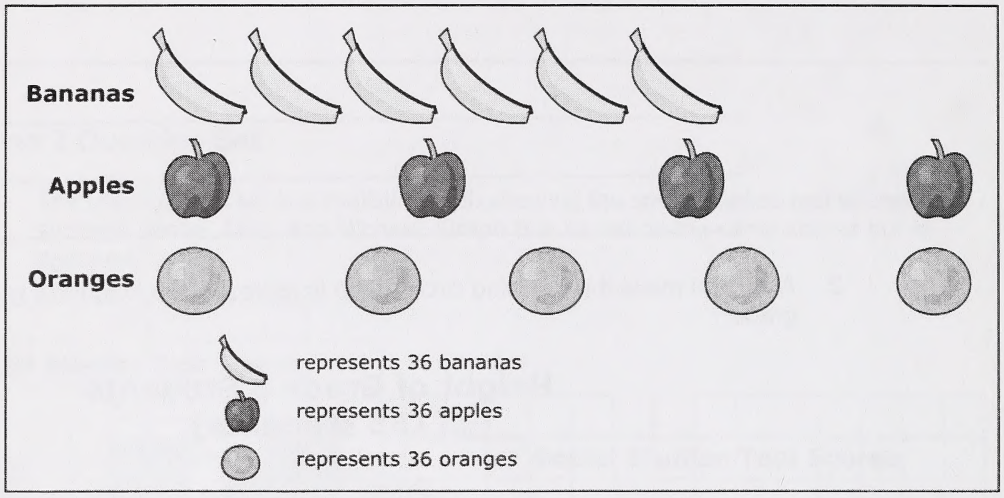
3. The following pictograph was used to represent the fruit sales at one corner store during one week.



(2 marks) a. Base your answer on the visual impression of the pictograph. According to the way the pictograph is created, which fruit seems to be sold in the smallest numbers? Explain.

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(2 marks) b. Which fruit actually is sold in the smallest numbers? Explain.

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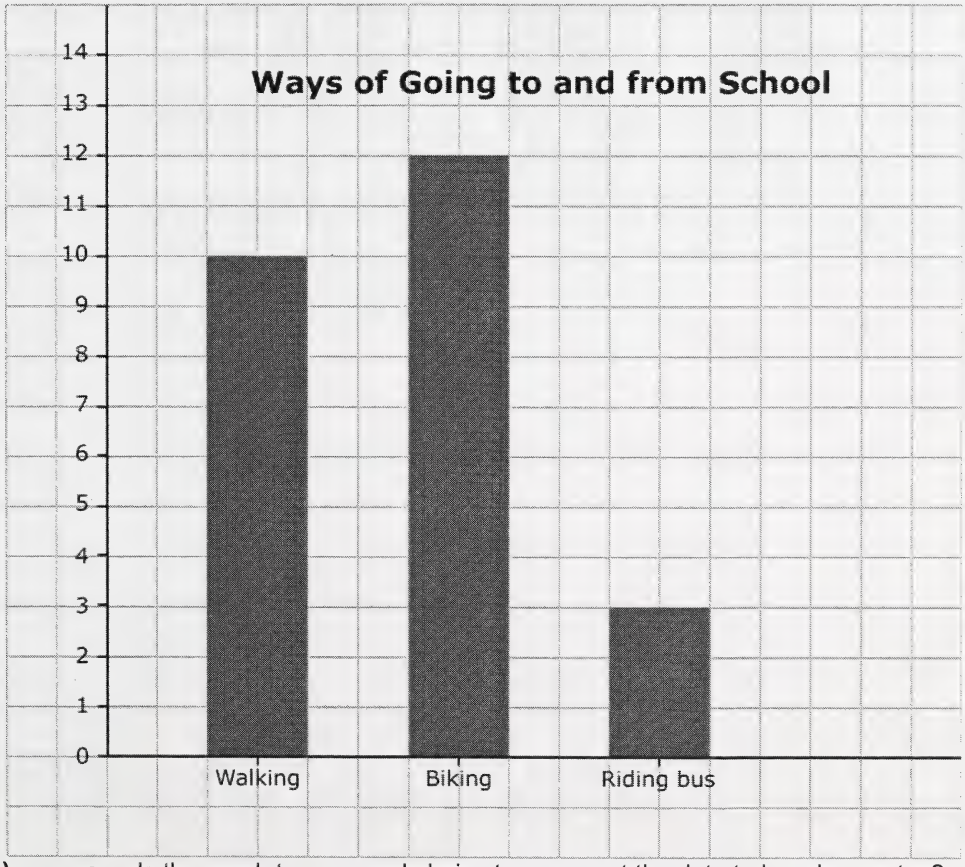
(2 marks) c. Describe how the pictograph should be drawn to avoid misleading readers of the graph.

Unit 7: Lesson 3 Question Set

1. A student did an investigation to see what methods students in her grade used to travel to school. She presented her findings as follows:



(2 marks) a. Is the graph type a good choice to represent the data to her classmates?

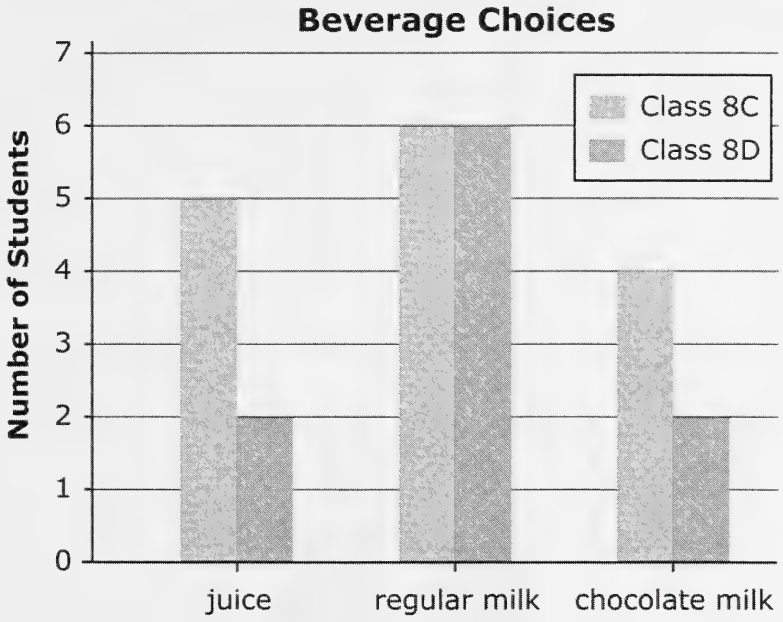
(2 marks)

b. How could this bar graph be made more readable?

(2 marks)

c. Suppose you wanted to show the results of the investigation to students in early grades. What graph type could be used more effectively? Explain your answer.

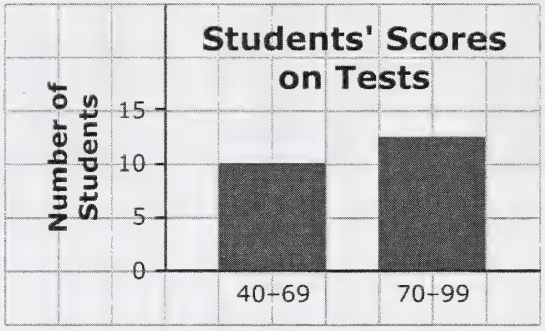
2. Students in classrooms 8C and 8D were given a choice of three beverages. The results were shown in the following double bar graph.



(2 marks) a. In which class did the greatest percentage of students choose regular milk? Explain.

(2 marks) b. Is the bar graph the best graph type to show the percentage of students for each choice? Explain your answer.

(2 marks) 3. Students' scores on an exam were shown on a bar graph.



Describe two ways that this bar graph could be made more informative.

(2 marks) 4. Turn to question 4 of "Check Your Understanding" on page 32 of the textbook. Madison made a double bar graph to show methods of communicating with friends. Note that this data was based on an equal number of boys and girls.

Why is the double bar graph more informative because there were an equal number of boys and girls?

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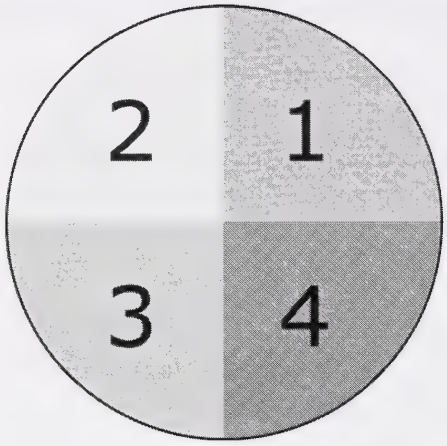
Unit 7: Lesson 4 Question Set

1. Rachel designed a probability experiment based on a coin and a spinner divided into four equal regions.

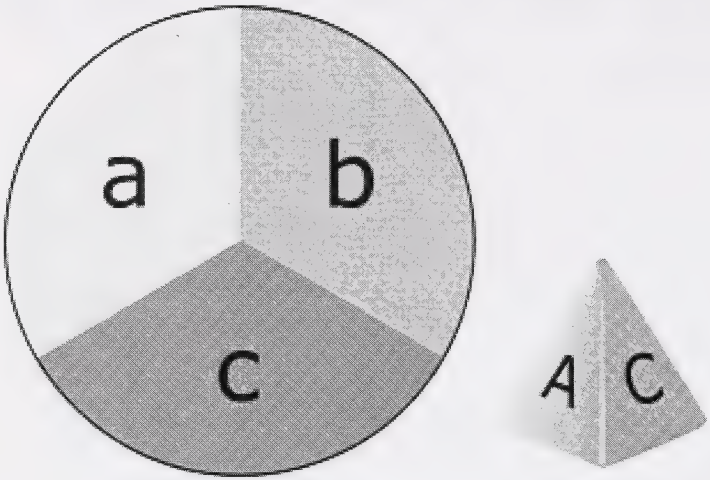


The regions of the spinner were numbered 1, 2, 3, and 4. The coin was to be tossed, and the spinner spun once for each outcome.

(4 marks) a. Make a tree diagram to represent the possible outcomes of the experiment.

(3 marks) b. Determine the probability of getting a heads on the coin and a 3 on the spinner. Express the probability as a fraction and as a percentage. Show your work.

2. Shania performed a probability experiment based on a spinner and a four-sided die.



The spinner was divided into three equal regions. These regions were labelled using the lowercase letters *a*, *b*, and *c*. The die had its four faces marked with letters *A*, *B*, *C*, and *D*.

(3 marks) a. Make a table to represent the sample space of Shania's experiment.

(2 marks) b. Determine the probability that the same letter would come up on both the spinner and the die. Show your work.

(2 marks) c. Determine the probability that both the spinner and the die will land on the first letter of the alphabet. Show your work.

Unit 7: Lesson 5 Question Set

1. A bag contains three spheres—one red, one green, and one blue. A spinner is divided into four equal regions, which are labelled 1, 2, 3, and 4. In a probability experiment, a sphere is chosen from the bag without looking inside the bag and the spinner is spun.

(4 marks) a. Use a table to display the sample space of the probability experiment, and indicate the number of possible outcomes for the experiment.

(2 marks) b. Determine the number of outcomes of the experiment using another strategy.

(5 marks) 2. Describe a probability experiment that has the number of possible outcomes given by the statement $6 \times 2 \times 3 = 36$.

(8 marks) 3. In planning what to wear for a school sports day, Grade 8 student Becky checked the weather forecast on the Internet. At the website that she checked, Becky was relieved to see the day's weather represented by an image of the sun.

She also saw the visual for a day after the sports day. She identified these icons as making up this visual:

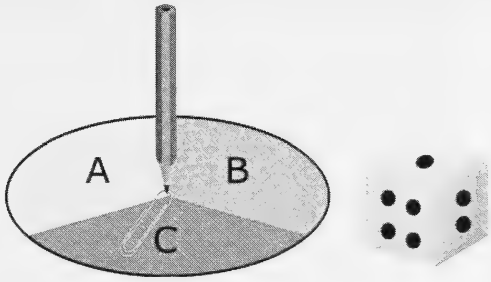
sun	
dark cloud (DC)	
light cloud (LC)	
rain (R)	

She thought of this question: How many ways could the weather be depicted through the use of a selection of the icons?

Use a tree diagram to answer Becky's question. Assume that at least one icon must be used and that the rain icon can only be used if both clouds are used.

Unit 7: Lesson 6 Question Set

1. While completing a probability experiment, Kootenay spun a spinner once that was divided into three equal regions and rolled a six-sided die once.



(4 marks) a. Show the sample space in a table of outcomes.

(2 marks) b. Use the table of outcomes to determine the probability of rolling a 6 with the die and getting a C on the spinner.

(3 marks) c. Use a calculation based on the probability of individual events to determine the probability of rolling a 6 and getting a C on the spinner.

2. Ryan thought of a probability experiment. In the experiment, he flipped a coin and selected one marble from a bag containing two green marbles, two red marbles, and two blue marbles.

(4 marks) a. Draw a tree diagram showing the possible outcomes for this experiment.

(2 marks) b. Use the tree diagram you completed in 2.a. to determine the probability of having the coin land on tails and then selecting a green marble from the bag.

(3 marks) c. Use another strategy to determine the probability of having the coin land on tails and then selecting a green marble from the bag.

(6 marks) 3. In a probability experiment with eight trials, a student flipped a coin and rolled a four-sided die once during each trial.

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	Coin	Die
Trial 1	H	1
Trial 2	H	4
Trial 3	T	2
Trial 4	H	2
Trial 5	T	3
Trial 6	T	4
Trial 7	H	2
Trial 8	T	1

Compare the experimental probability of getting heads on the coin and rolling a 2 on the die to the theoretical probability of getting this outcome. Show your work.

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